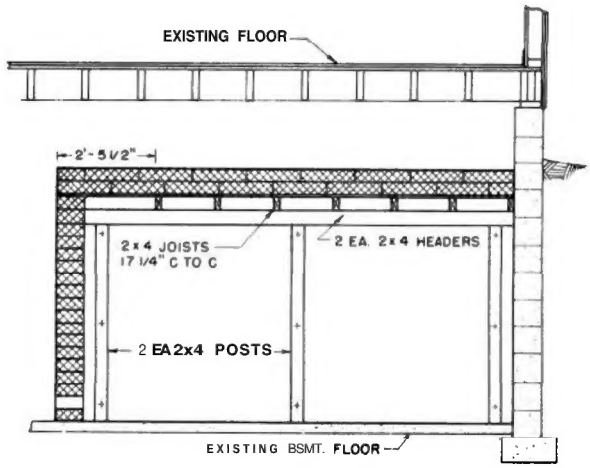
H-I 2-C
May 1980

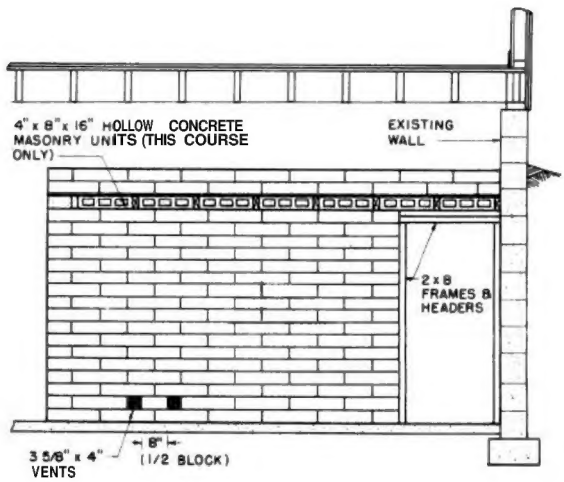
A compact shelter
is provided
in a basement corner
by the use of
common lumber
and concrete blocks
with mortar joints
for permanent construction.

HOME FALLOUT SHELTER
concrete block shelter-basement location plan C

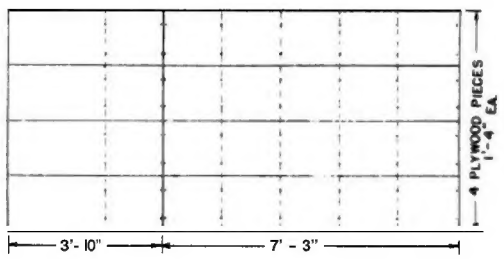
FEDERAL EMERGENCY
MANAGEMENT AGENCY



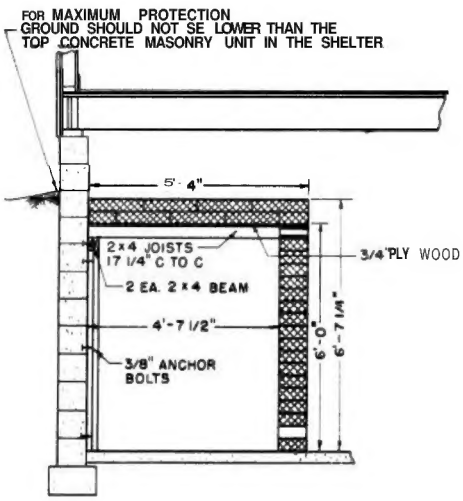
SECTION A



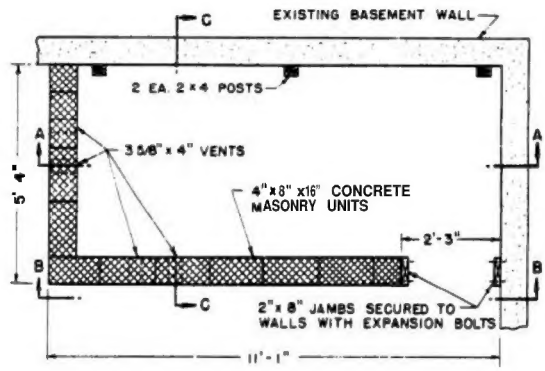
SECTION B



PLAN OF PLYWOOD CEILING



SECTION C



PLAN

GENERAL INFORMATION

This compact basement shelter will provide low-cost protection from the effects of radioactive fallout. Its purpose is to provide adequate protection for the minimum cost in an existing basement. In addition to the low cost, materials should be readily available, and the labor time will be short.

TECHNICAL SUMMARY

This shelter has about 50 square feet of area, 300 cubic feet of space and will provide shelter for five persons.

The materials required to build this shelter are obtainable at local concrete block plants and/or lumber yards.

Natural ventilation is provided by the entranceway and the air vents in the shelter wall.

Estimated construction time for the basic shelter is less than 44 man-hours.

MATERIALS LIST

Item	Actual Number Required
Masonry:	
4" x 8" x 16" solid concrete masonry units or	296 blocks
2-1/4 x 4" x 8" solid bricks	1776 bricks
4" x 8" x 16" hollow concrete masonry units	7 blocks
Lumber: ("Construction" or "No. 1" grade or better)	
posts 2 x 4 x 5'-4"	6
joists 2 x 4 x 5'-4"	7
beams 2 x 4 x 10'-5-1/2"	2
frame 2 x 8 x 5'-4-3/8"	2
header 2 x 8 x 2'-3"	2
plywood 1'-4" x 6'-9-1/4" x 3/4" (utility B-C grade)	4 pieces
plywood 1'4" x 4'-3-3/4" x 3/4" (utility B-C grade)	4 pieces
Hardware :	
8d nails	2 pounds
10d nails	2 pounds
3/8" bolt size multiple-expanding machine bolt anchors	18
3/8" x 3-1/2" square-head unfinished anchor bolts	18
Mortar (prepared dry-mix bags	9 bags

Special tools :

3/4" star drill for 3/4" x 2-7/8" anchor bolts

CONSTRUCTION SEQUENCE

1. Lay out guidelines with chalk on basement floor for shelter walls.
2. Lay first course of 4" x 8" x 16" solid blocks in a full bed of mortar to make the walls 8" thick. Vary the thickness of mortar bed if basement floor is not level.
3. Set door frame in place and continue to lay wall blocks. Be sure to leave the 4 " spaces for air vents as shown on the drawing.
4. Continue this procedure until the walls have been laid up to a height of 5'-8" (17 courses). This height can be increased, if the basement headroom permits and provided the shelter roof remains below the outside ground level.
5. Fasten posts and door frame to the basement wall using two expansion anchors and bolts for each. Be certain the posts rest on the floor.
6. Nail two 2 x 4 boards together to make the wall beam. Nail the beam on top of the posts and secure with expansion anchors and bolts to the wall.
7. Place wood joists in position and secure with nails.
8. Place the 4" x 8" x 16" hollow blocks between joists as shown on the drawing. The holes in the blocks will afford ventilation.
9. Put several 3/4" pieces of plywood on the joists as shown and nail them to the joists with 8d nails.
10. Lay two layers of solid 4" x 8" x blocks flat on top of the plywood; stagger the joints. Mortar is not required in the ceiling.
11. Continue procedures 9 and 10 until the roof is completed.
12. Additional blocks stored in the shelter are for stacking in the entryway after occupancy.